2006 CODE UPDATE TRAINING

INTERNATIONAL RESIDENTIAL CODE 2006 EDITION

PLUMBING SECTION

PMG Supervisor:

Mr. Vacant	751-4338

PMG Lead Inspectors:

North Area: Bob Ressler	814-6983
South Area: Donald Mimms	814-6999
East Area: John Hudgins	814-6980
West Area: Jeff Brooks	690-4471
John Sanderson	317-6418

Commercial Inspectors:

Curt Campbell:	814-7003
Dustin McLehaney:	317-6420

IRC 2601.1

SCOPE

- Adds language to the body of the text to read as follows: The installation of plumbing, appliances, equipment and systems not addressed by this code shall comply with the applicable provisions of the *International Plumbing Code.*

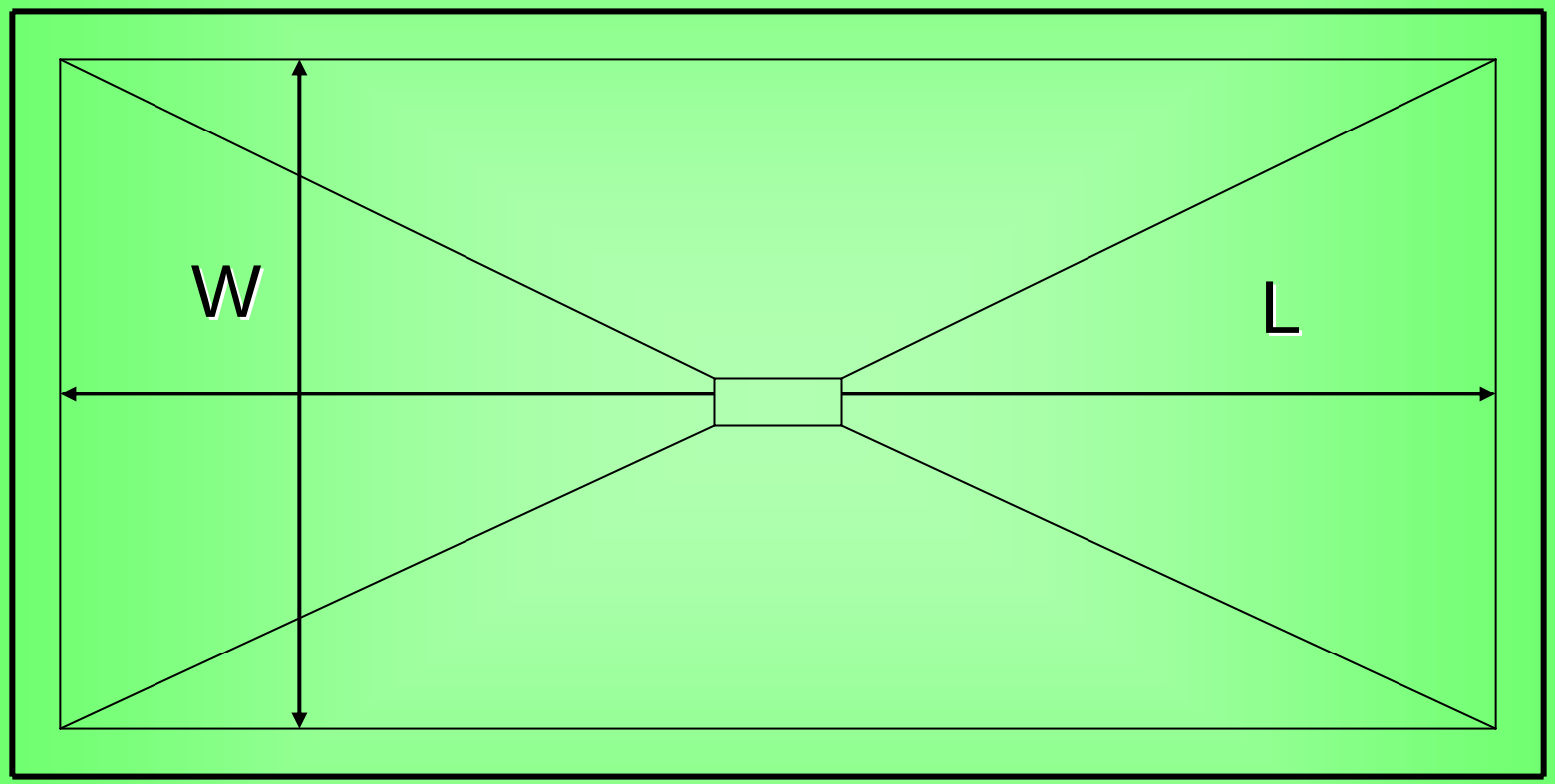
IPC 417.4 & IRC P2708.1

SHOWER COMPARTMENT GENERAL

- Added exception #2 to read as follows: Shower compartments having not less than 25 inches in minimum dimension measured from the finished interior dimension of the compartment provided the shower compartment has a minimum of 1300 square inches of cross-sectional area.

IPC 417.4 & IRC P2708.1

Shower Pan



W = 25” min.

L = depends on W. It shall be a minimum of 1300 / W.

IPC 417.4.2 & IRC P2708.1.1

ACCESS

- Added section to read as follows: The shower compartment access and egress opening shall have a minimum clear and unobstructed finished width of 22 inches.


22”

IRC P2708.3

SHOWER CONTROL VALVES

- Added alternative standard CSA B125.
- Added language as follows: Inline thermostatic valves shall not be utilized for compliance with this section.

IPC 424.2 & IRC P2708.4

HAND SHOWERS

- Added new section to read as follows: Hand-held showers shall conform to ASME A112.18.1 or CSA B125.1. Hand-held showers shall be provided backflow protection in accordance with ASME A112.18.1 or CSA B125.1 or shall be protected against backflow by complying with ASME A112.18.3.

IRC P2713.3

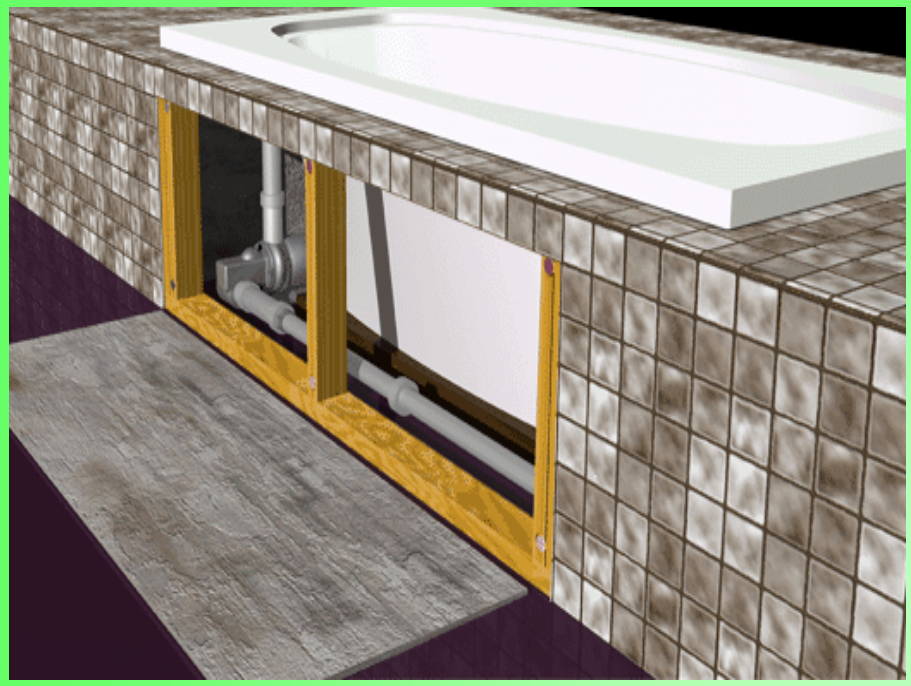
BATHTUB AND WHIRLPOOL BATHTUB VALVES

- Added new section to read: The hot water supplied to tubs and whirlpool bathtubs shall be limited to a maximum temperature of 120 deg. F by a water temperature limiting device that conforms to ASSE 1070, except where such protection is provided by a combination tub/shower valve in accordance with Section P2708.3.

IPC 421.5 & IRC P2720.1

ACCESS TO WHIRLPOOL BATHTUB PUMPS

- Adds new code requirements: Where the manufacturer's installation instructions do not specify or are not clear, the access to the pump must be a minimum of a 12" X 12"opening and if the pump is more than 2 feet from the opening, it must be a minimum of 18" x 18". In all cases, the access opening shall be unobstructed and be the size necessary to permit the removal and replacement of the pump.



IPC 408.3 & IRC P2721.2

BIDET WATER TEMPERATURE

- P2721.2 Adds new code requirement as follows: The discharge water temperature from a bidet fitting shall be limited to a maximum temperature of 110 deg. F by a water temperature-limiting device conforming to ASSE 1070.

IPC 504.7.1 & IRC P2801.5.1

PAN SIZE AND DRAIN

- The IPC and The IRC both add the piping requirements for safety pan drains shall be approved for water distribution pipe.

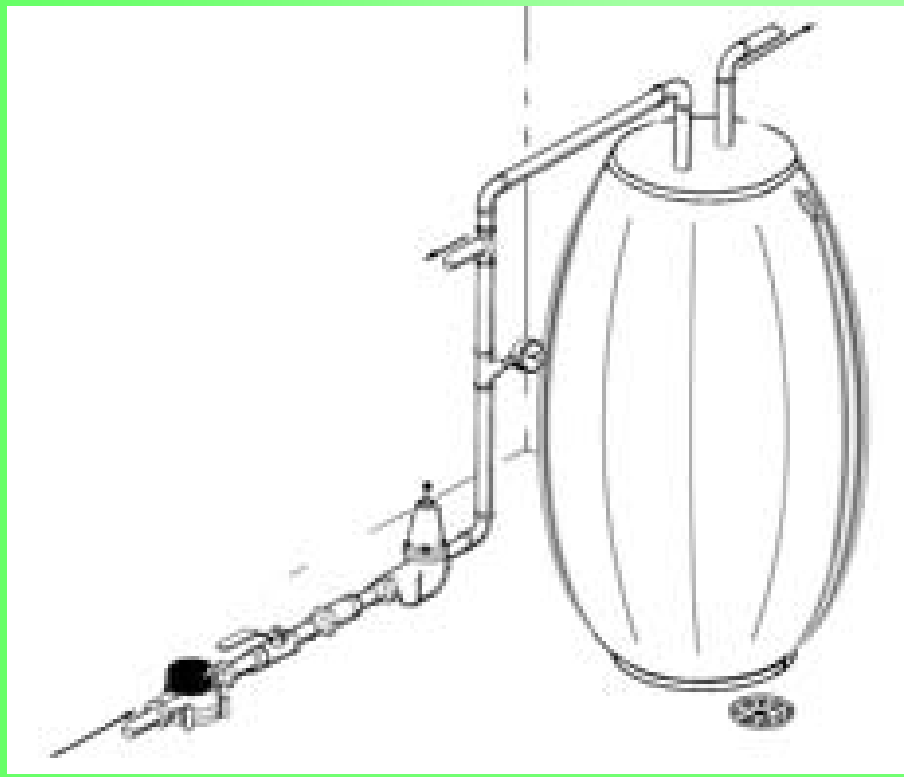
IRC P2903.4

THERMAL EXPANSION CONTROL

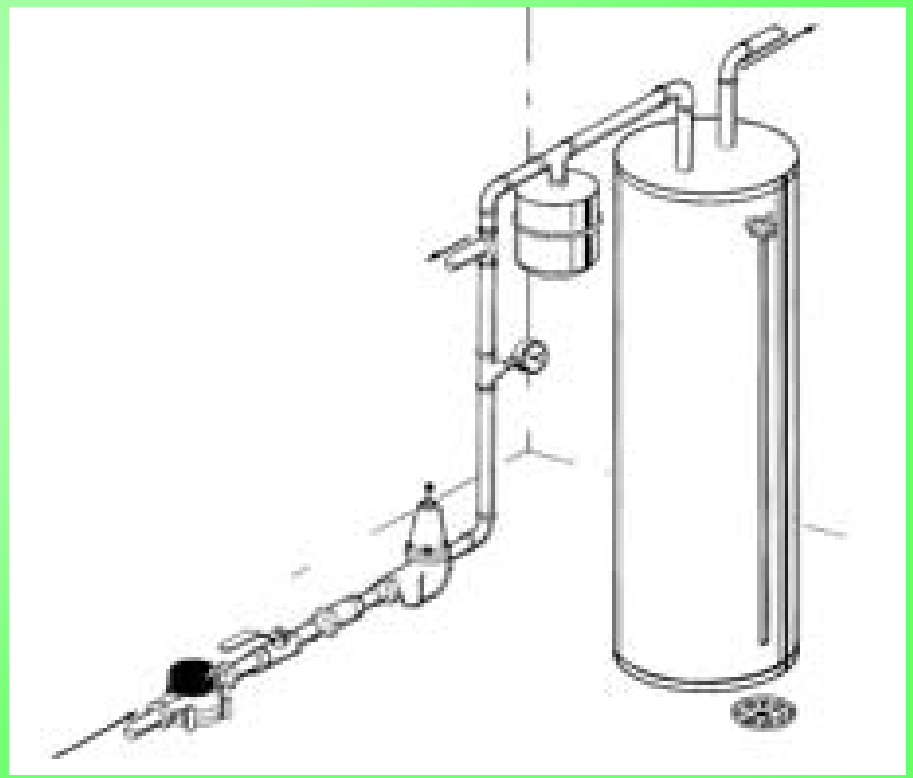
- Revised entire section adding two subsections.
- **P2903.4 Thermal Expansion Control.** A means for controlling increased pressure caused by thermal expansion shall be provided where required in accordance with Sections P2903.4.1 and P2903.4.2.

THERMAL EXPANSION

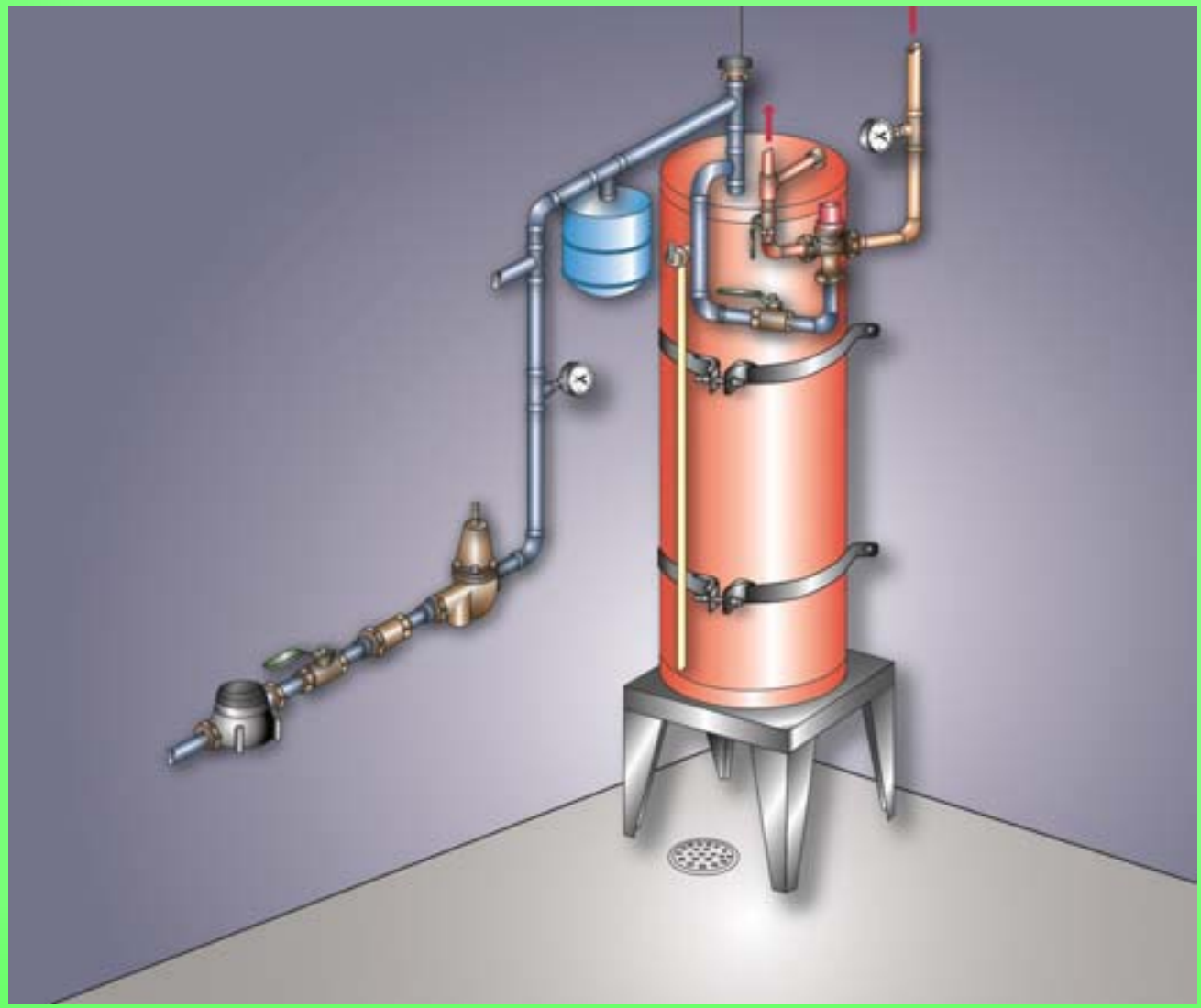
Without Protection



With Protection



THERMAL EXPANSION



IRC P2903.4

THERMAL EXPANSION CONTROL

- **P2903.4.1 Pressure-Reducing Valve.** For water service system sizes up to and including 2 inches, a device for controlling pressure shall be installed where, because of thermal expansion, the pressure on the downstream side of a pressure-reducing valve exceeds the pressure-reducing valve setting.

IRC P2903.4

THERMAL EXPANSION CONTROL

- **P2903.4.2 Backflow Prevention Device or Check Valve.** Where a backflow prevention device, check valve, or other device is installed in a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

IRC P2904.3

POLYETHYLENE PLASTIC PIPING INSTALLATION

- Added provisions for joints and joining methods for Polyethylene Plastic Piping.
- **P2904.3. Heat-Fusion Joints.** Joint surfaces shall be clean and free from moisture. All joint surfaces shall be heated to melting temperature and joined. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM D 2657.
- **P2904.3.2 Mechanical Joints.** Mechanical joints shall be installed in accordance with the manufacturer's instructions.

IRC P2904.4

WATER SERVICE PIPING

- Added provisions to this section to address water service pressure in excess of 160 PSI.
- Added section to read as follows: Where the water pressure exceeds 160 PSI, piping material shall have a rated working pressure equal to or greater than the highest available pressure. Water service piping materials not third-party certified for water distribution shall terminate at or before the full open valve located at the entrance to the structure. Ductile iron water service piping shall be cement mortar lined in accordance with AWWA C104.

IRC P2904.5.1

UNDER CONCRETE SLABS

- Added provisions for the use of polypropylene pipe or tubing under slabs
- Added provisions for the use of polyethylene/aluminum/polyethylene (PE-AL-PE) pipe under slabs.

IRC P2904.10

POLYPROPYLENE PLASTIC

- New language introduced that allows the use of polypropylene plastic for hot and cold water distribution systems.
- **P2904.10 Polypropylene (PP) Plastic.**
- **P2904.10.1 Heat Fusion Joints.**
- **P2904.10.2 Mechanical and Compression Sleeve Joints.**

IRC P3002

DRAINAGE AND VENT PIPE TABLES

- Tables 3002.1(Drain, Waste and Vent Piping and Fitting Material) and P3002.2(Building Sewer Piping) have been deleted and replaced with four new tables.
- **Table P3002.1(1) Above-Ground Drainage and Vent Pipe.** New table added.
- **Table P3002.1(2) Underground Building Drainage and Vent Pipe.** New table added.

IRC P3002

DRAINAGE AND VENT PIPE TABLES

- **Table P3002.2 Building Sewer Pipe.** New table added.
- **Table P3002.3 Pipe Fittings.** New table added.

IRC P3003.3

JOINTS AND CONNECTIONS

- Subsections P3003.3 – P3003.18 have been reorganized to make the code easier to use and updates the joining methods for the newly approved materials approved for use for the 2006 code.

IRC P3102

VENT STACKS AND STACK VENTS

- The requirement for vent stacks has been deleted because IRC structures are limited to 3 stories and vent stacks would never be required.

IPC 903 & IRC 3102

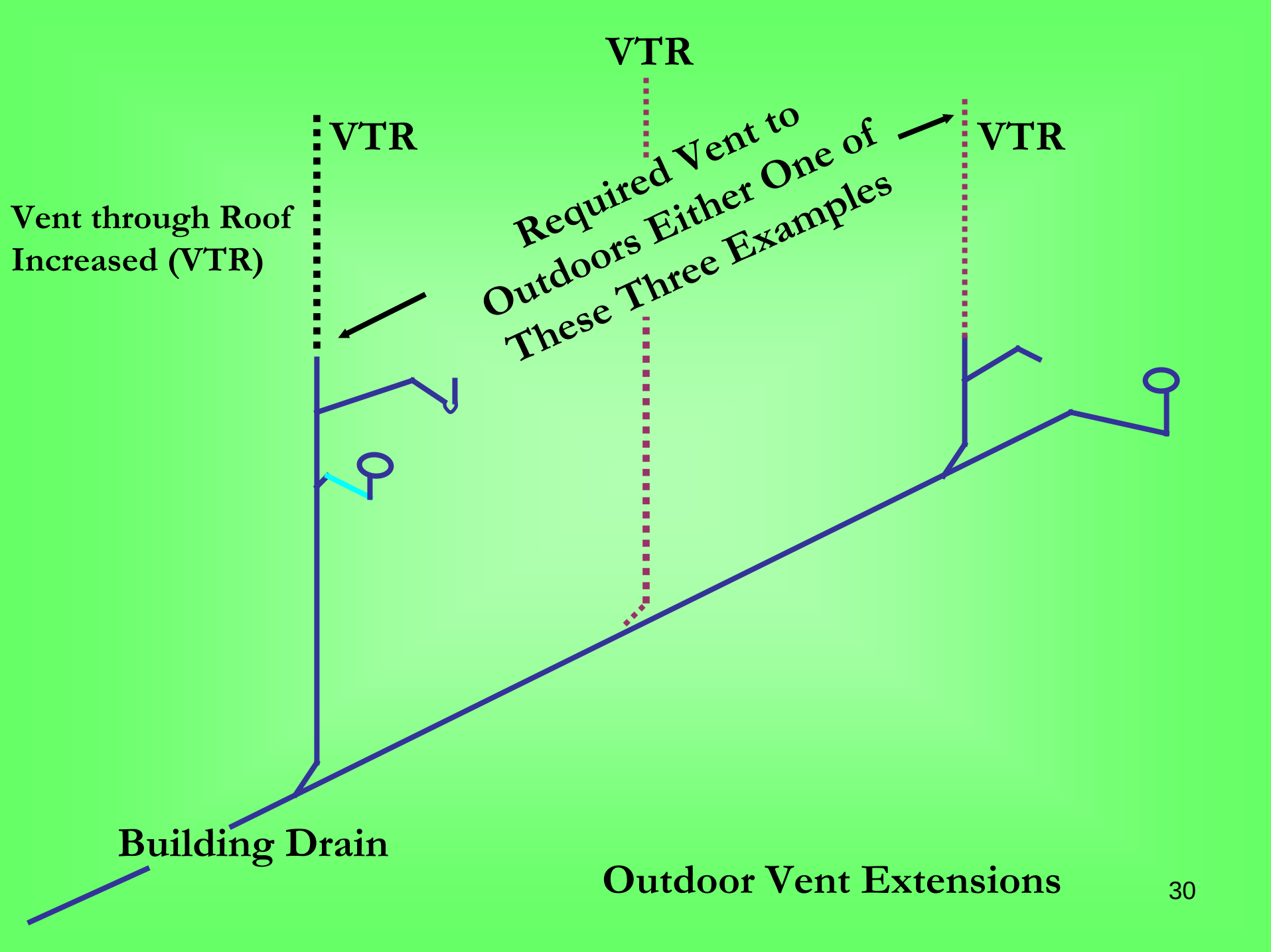
VENTS AND VENT STACKS

- Renumbered and revised this section as follows.
- **Required Vent Extension.** Requires each building drain to have one vent extending through the roof.
- **Installation.** Requires the vent to be a dry vent that connects to the building drain directly or through an extension of a drain that connects to the building drain. Also requires it to not be an island fixture vent as allowed in P3112.

IPC 903 & IRC 3102

VENTS AND VENT STACKS

- **Size.** Requires the vent to be sized in accordance with Section 3113.1 **based on the required size of the building drain.**



Outdoor Vent Extensions

IRC P3103.1

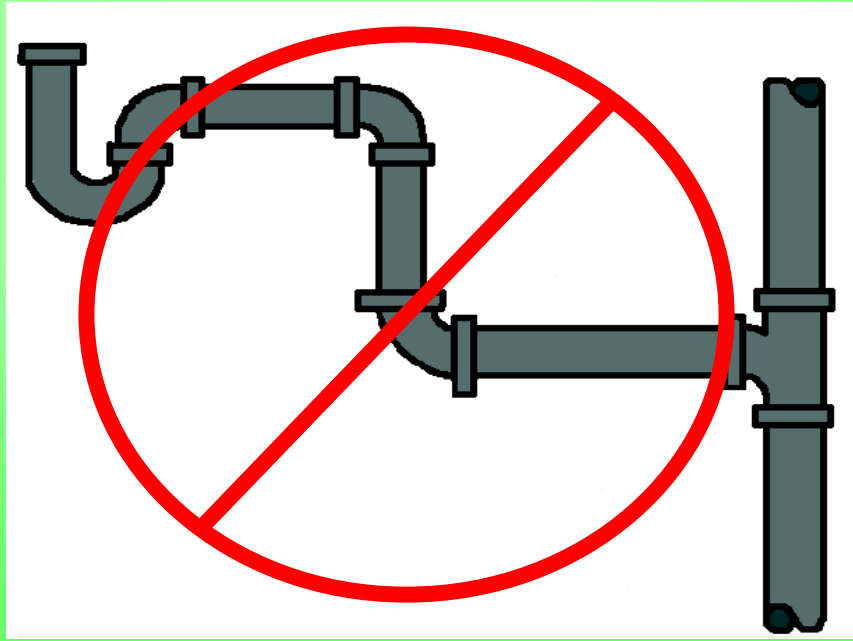
ROOF EXTENSION

- **P3103.1 Roof Extension.** This section has been reworded to require vent extensions to extend a minimum of 6 inches above the roof.

IRC P3105 .2 & P3105.3

FIXTURE DRAINS

- P3105.2 removes **except as provided in Section P3105.3.**
- P3105.3 this section has been totally removed.



IRC P3108

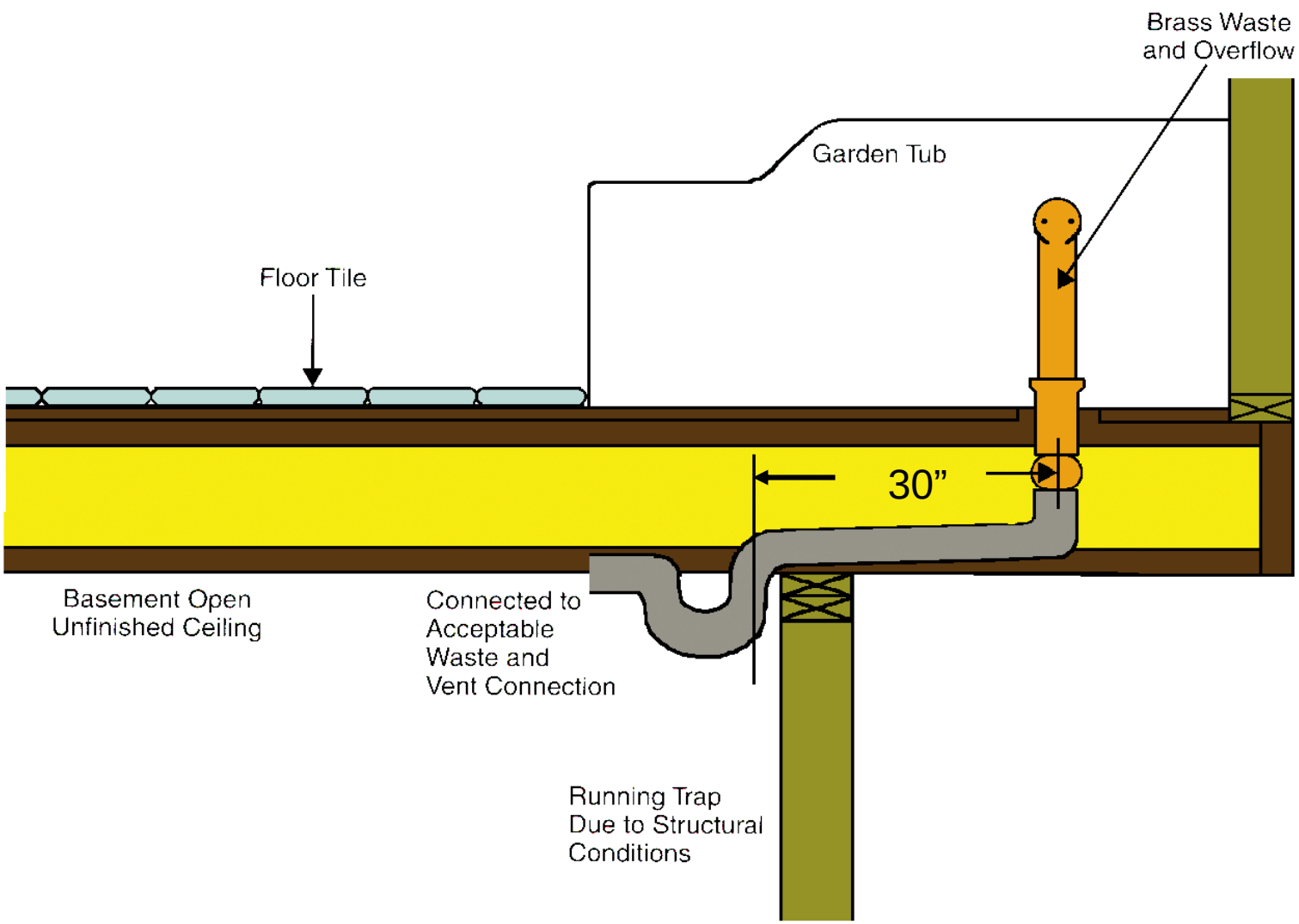
WET VENTING

- **Tables P3108.1(1), P3108.1(2) and P3108.1(3)** have been deleted from the code text and moved to Appendix N. Appendix N is ***intended as a guide only***.
- **P3108.2 Vent Connections.** Added new language to clarify the section.
- **P3108.3 Size.** Added new language to require dry vents described in P3108.2 to be sized on the basis of the largest required diameter of pipe within the wet vent system.

IPC & IRC TRAPS

- **P3201.5 Prohibited Trap Designs.** Sub-section #3 deletes except as permitted under Section P3105.3.
- **IPC 1002.1 & IRC P3201.6 Number of Fixtures Per Trap.** Deletes “placed as close as possible to the fixture outlet” and adds **the horizontal distance shall not exceed 30 inches measured from the center line of the fixture outlet to the centerline of the inlet of the trap.**

IRC P3201.6



Fixture Traps

IRC P3201.7

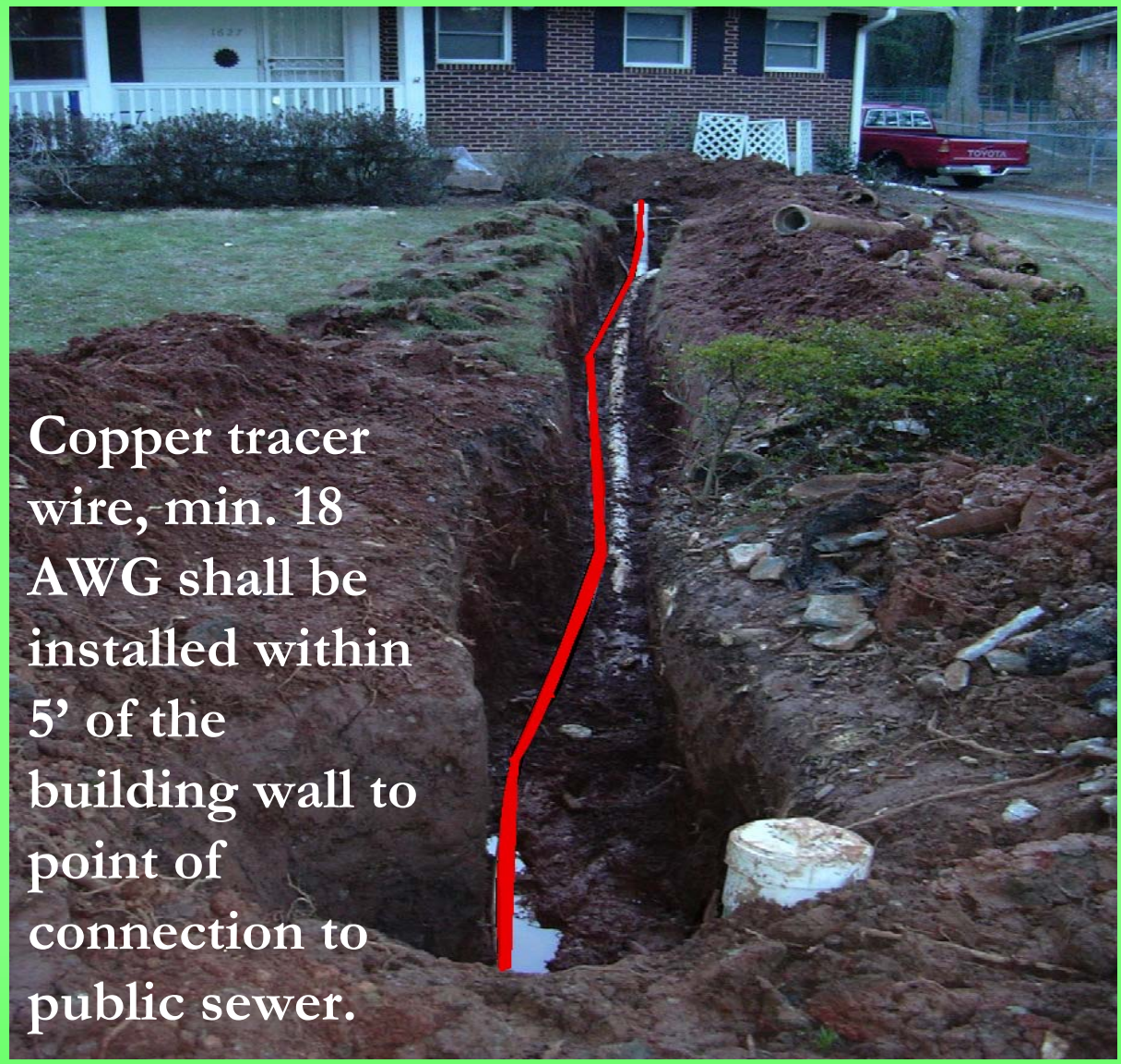
SIZE OF TRAPS AND TRAP ARMS FOR PLUMBING FIXTURES

- Adds new values for multiple shower heads based on the **total** flow rate through showerheads and body sprays.

5.7 g.p.m. or less	1 ½”
More than 5.7 g.p.m. to 12.3 g.p.m.	2”
More than 12.3 g.p.m. to 25.8 g.p.m.	3”
More than 25.8 g.p.m. to 55.6 g.p.m.	4”

USBC Tracer Wire Amendments

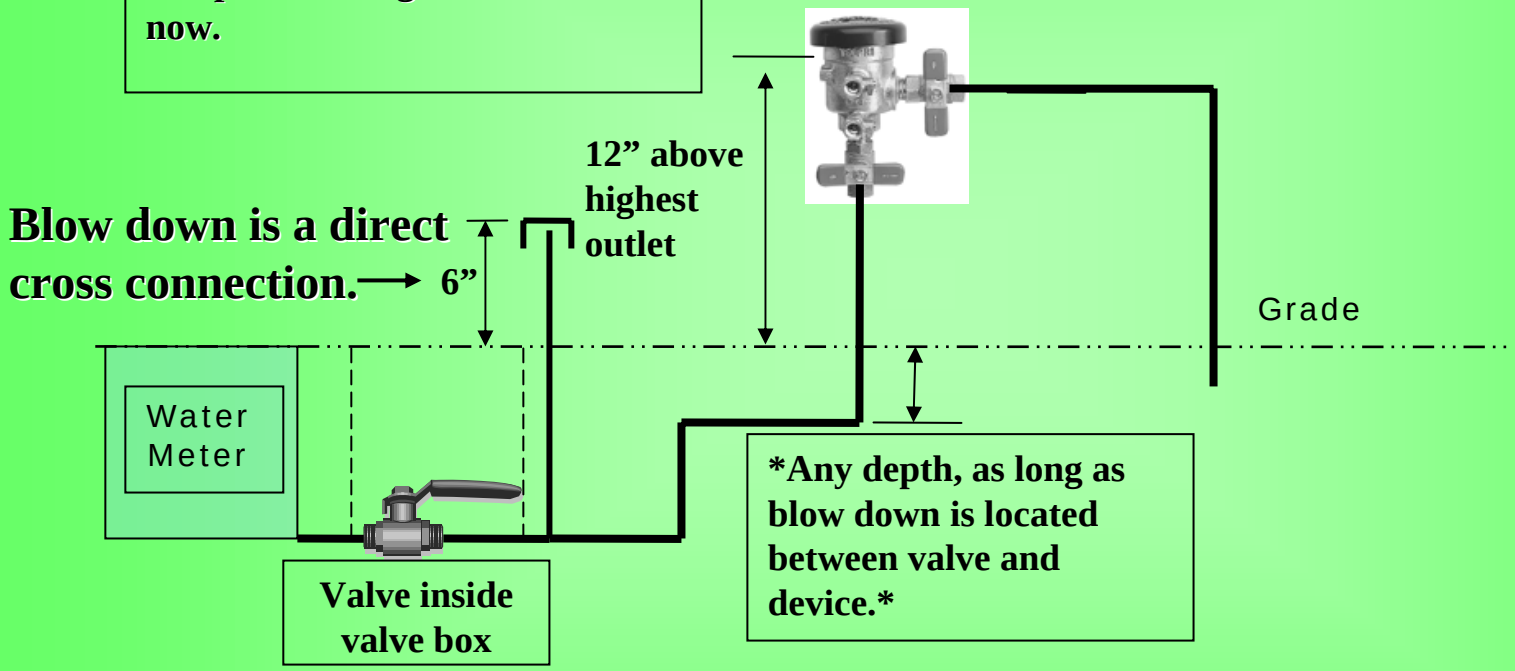
- USBC adds this section for non-metallic sewers: Non-metallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches of the pipe and shall be installed from within five feet of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.


Copper tracer wire, min. 18 AWG shall be installed within 5’ of the building wall to point of connection to public sewer.

Lawn Irrigation Backflow Preventers

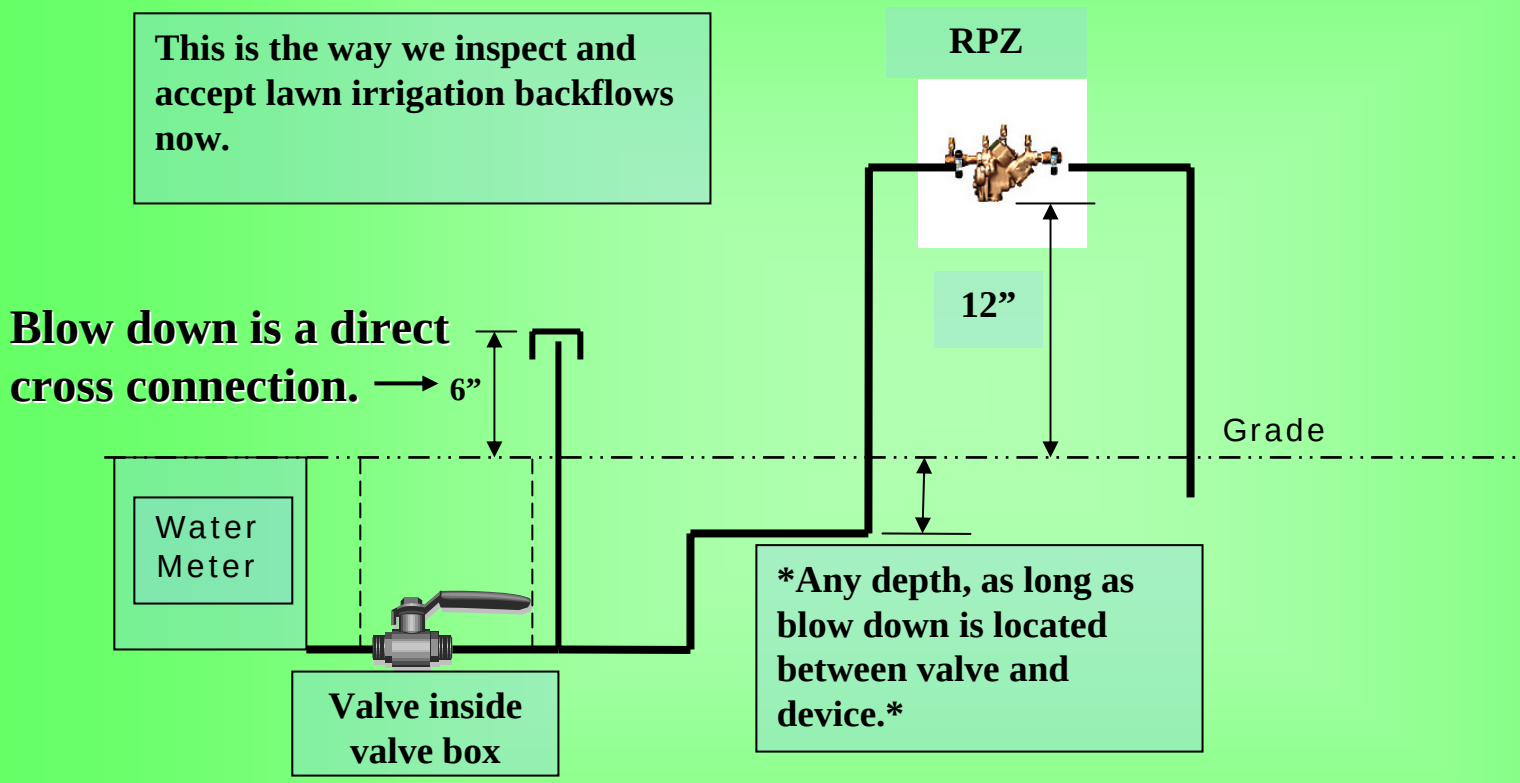
Pressure Vacuum Breaker

This is the way we inspect and accept lawn irrigation backflows now.



Reduced Pressure Zone Backflow Preventer

This is the way we inspect and accept lawn irrigation backflows now.



Pressure Vacuum Breaker

This is the way we will require and accept lawn irrigation backflows beginning with permit #20080501-000.

12” above highest outlet

Grade

Water Meter

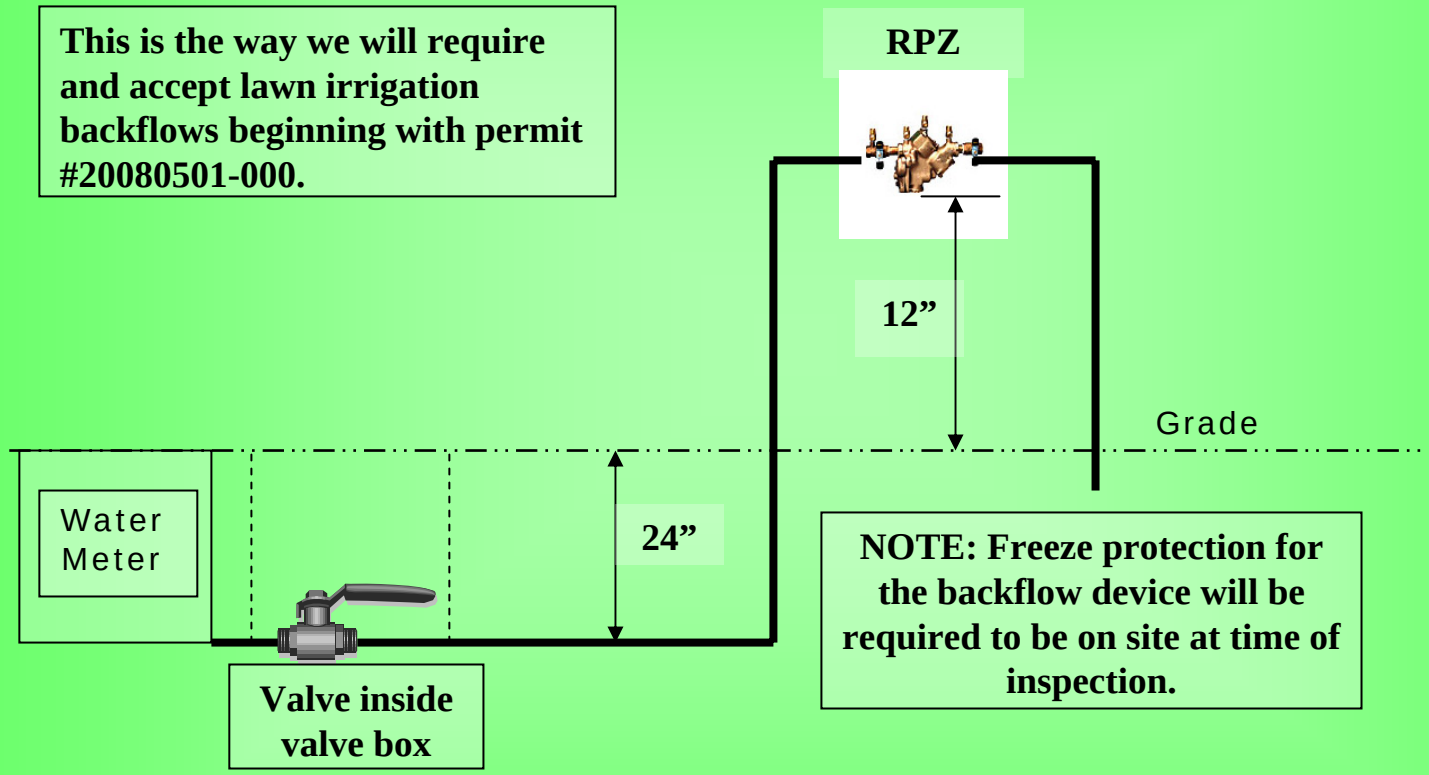
24”

Valve inside valve box

NOTE: Freeze protection for the backflow device will be required to be on site at time of inspection.

Reduced Pressure Zone Backflow Preventer

This is the way we will require and accept lawn irrigation backflows beginning with permit #20080501-000.



Lawn Irrigation Backflow Preventers

2006 Code Update Training

2006 International Plumbing Code

310.5 Urinal Partitions

- This is a new section in the IPC requiring the installation of walls or partitions for privacy.
- This section also has the specific dimensions of the walls or partitions.
- There are exceptions for this requirement, one not being required in single sex or unisex toilet rooms with a lockable door and in day care or child care facilities where one urinal is not required to have a partition for monitoring of small children.

URINAL PARTITIONS

Table 403.1 Minimum Number of Required Plumbing Fixtures (Institutional I-4)

- The IPC deletes the requirement for a bathing facility in adult day care and child care occupancies
- Deleted the requirement for separate employee restrooms.

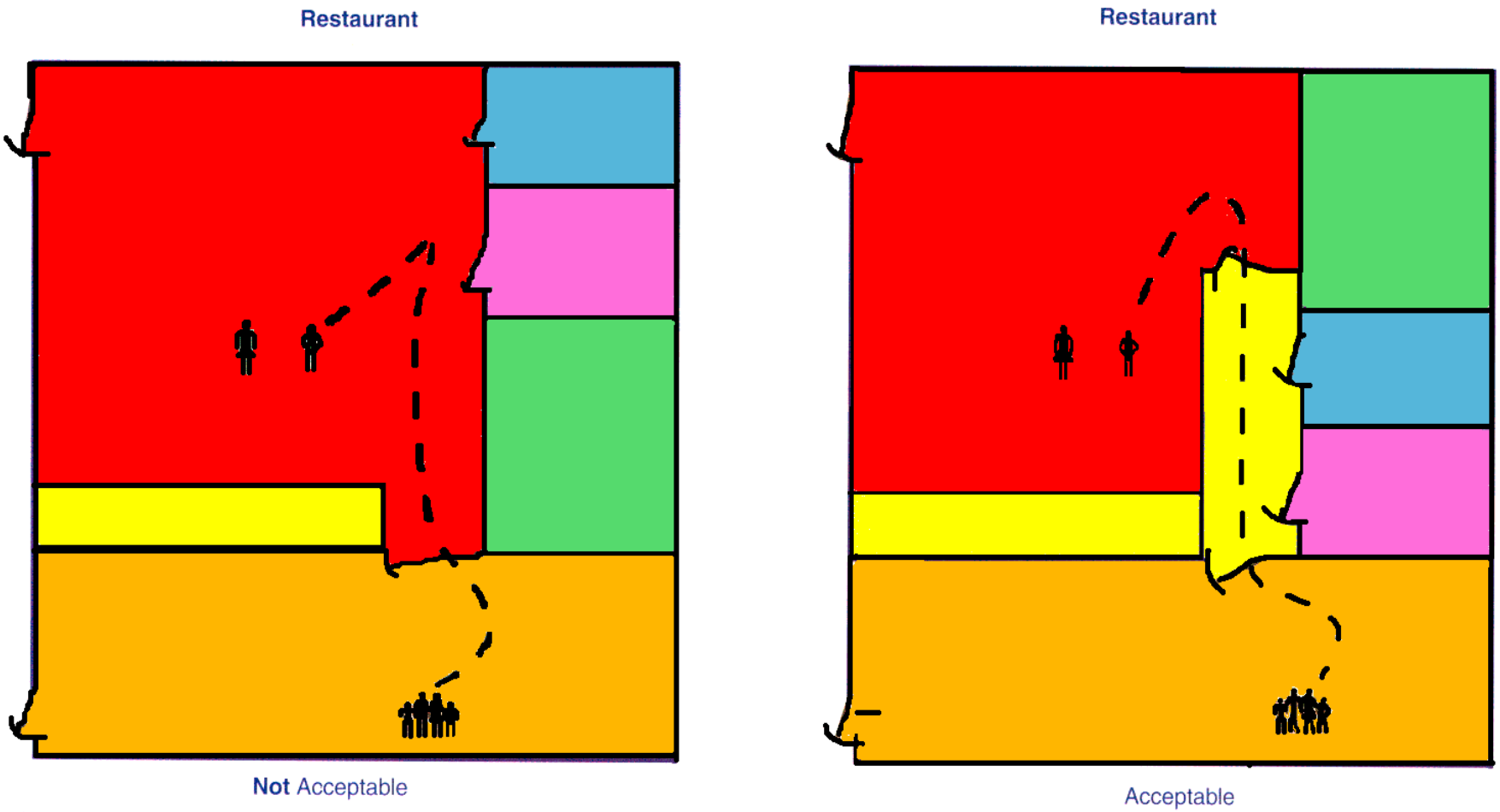
Table 403.1 Minimum Number of Plumbing Fixtures (Business Classification)

- The lavatory requirements were changed from 1 per 40 for the first 80 and 1-per 80 for the remainder, exceeding 80.

403.4 Required Public Toilet Facilities

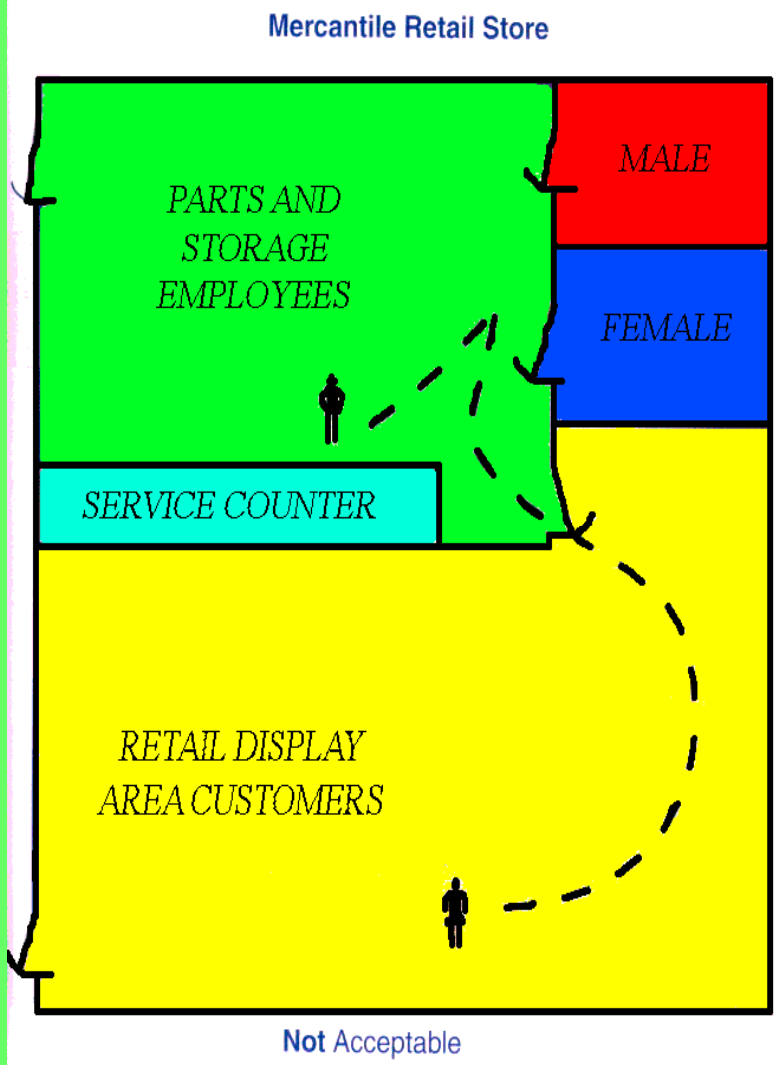
- This section requires that the accessible route to public facilities shall not pass through kitchens, storage rooms, closets, or similar spaces.
- This section also requires that employees shall be provided with toilet facilities in all occupancies.
- Employee toilet facilities shall be either separate or combined employee and public toilet facilities.

Customer Access to Toilet Rooms (Combined)

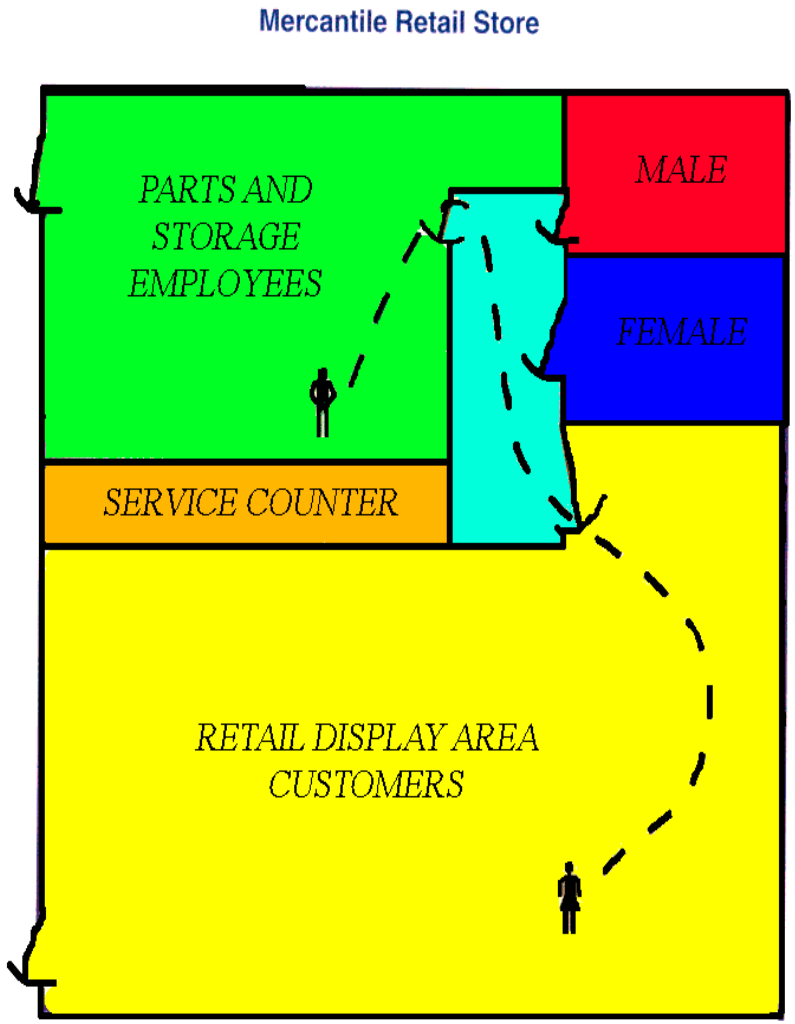


Location of Toilet Facilities

Customer Access to Toilet Rooms (Combined)



Not Acceptable



Acceptable

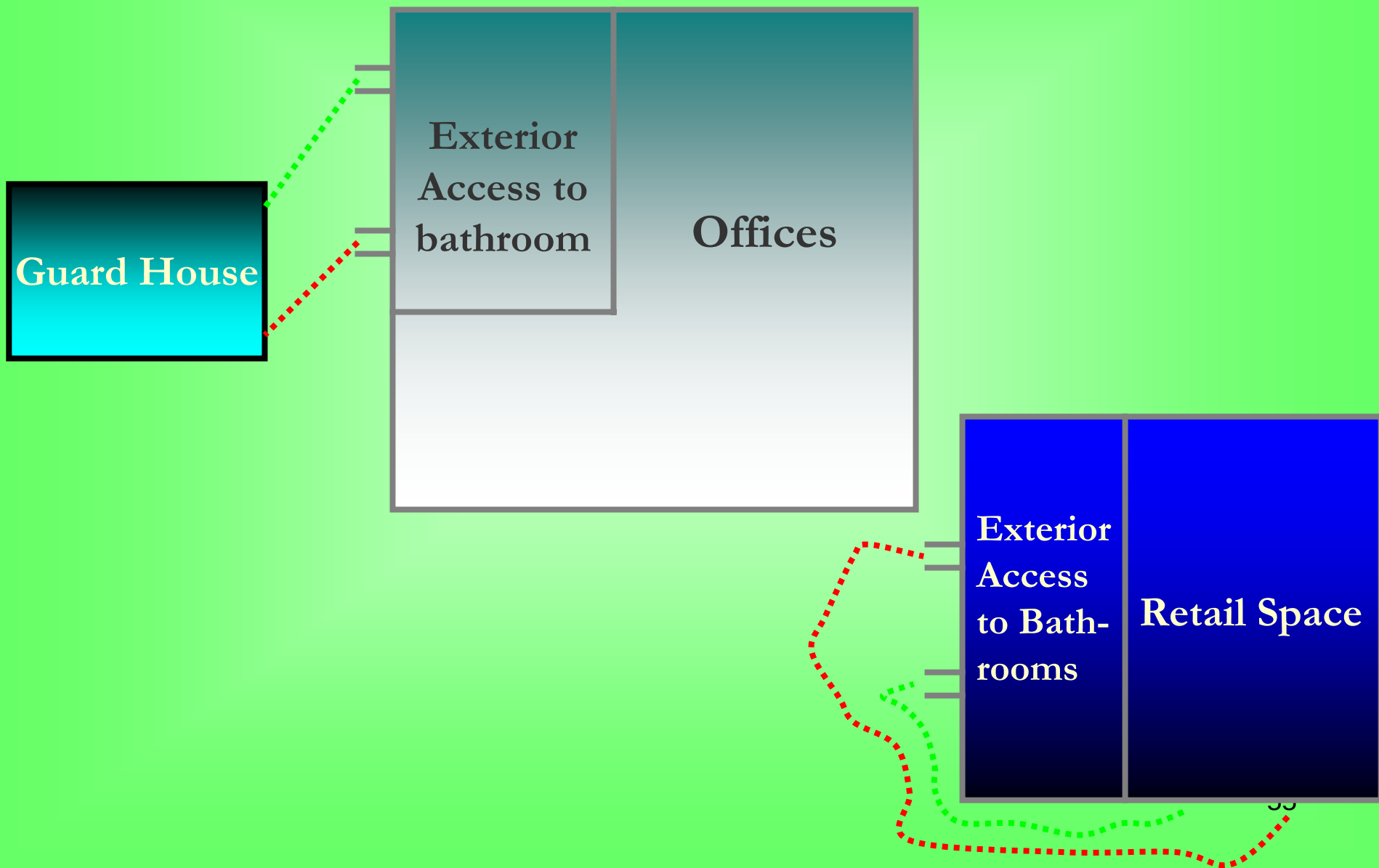
Location of Toilet Facilities

403.4 Required Public Toilet Facilities

USBC Amendment

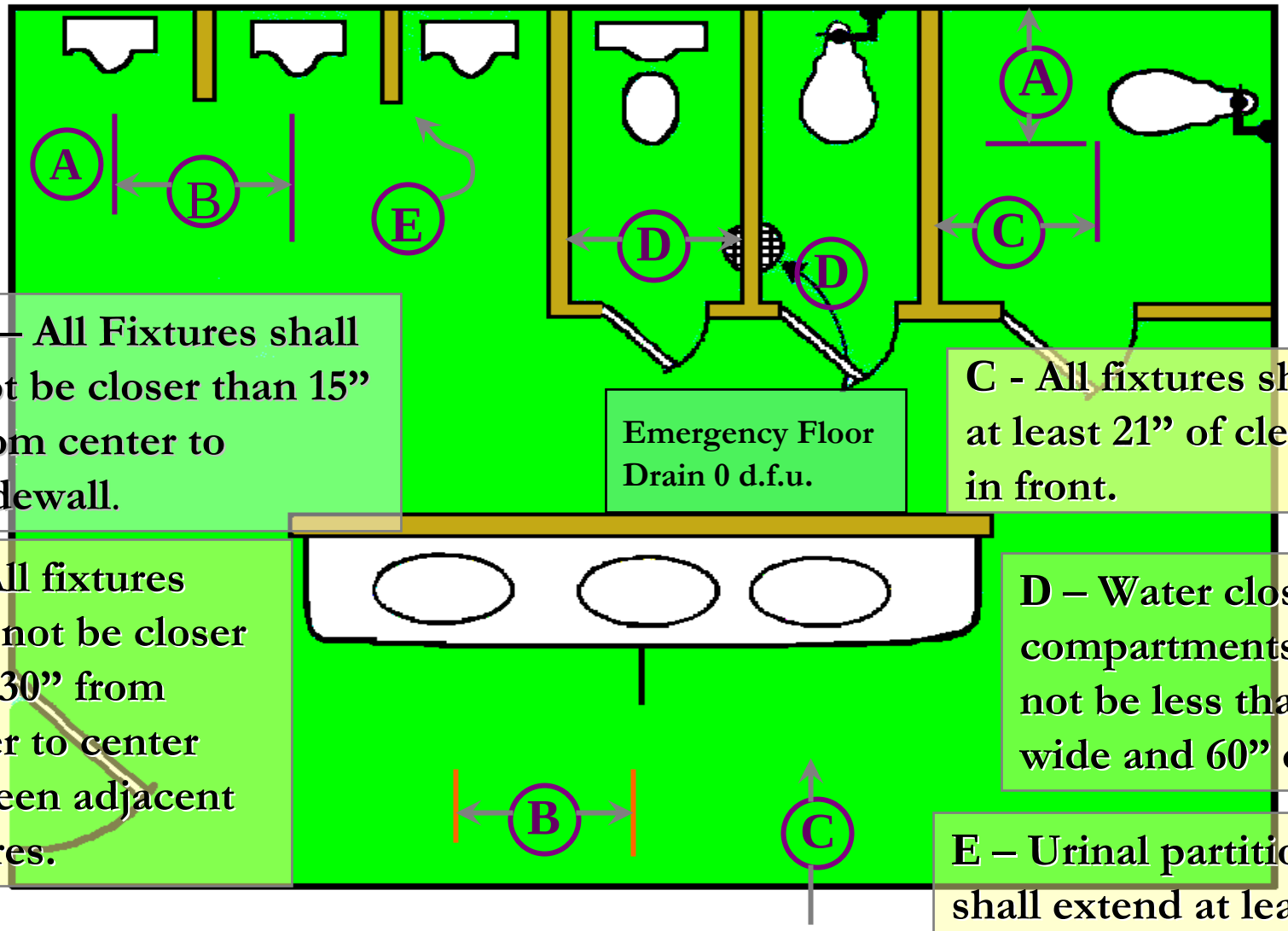
Access to the required toilet facilities shall be provided at all times during occupancy. Access to the required facilities shall be from within the building or from the exterior of the building, provided that the path of travel does not exceed the maximum distances specified in Section 403.4.1 and 403.4.2. The number of fixtures located within the required toilet facilities shall be provided in accordance with Section 403 for all users.

Acceptable Travel Distance



405.3.1 Water Closets, Urinals, Lavatories, or Bidets

- This section was editorially revised to clarify that these fixtures need proper clearance for user operation.



A – All Fixtures shall not be closer than 15” from center to sidewall.

B – All fixtures shall not be closer than 30” from center to center between adjacent fixtures.

C - All fixtures shall have at least 21” of clearance in front.

D – Water closet compartments shall not be less than 30” wide and 60” deep.

E – Urinal partitions shall extend at least 18” from the wall or 6” out from the lip.

Fixture Clearances

419.1 Approval (Urinals)

- This section adds the ANSI Z124.9 standard for plastic urinals, including waterless urinals.
- This section also clarifies that only water supplied urinals have to meet the hydraulic performance requirements of ASME A112.19.6, CSA B45.1, or CSA B45.5.

TABLE 906.1
MAXIMUM DISTANCE OF FIXTURE TRAP FROM VENT

SIZE OF TRAP (inches)	SLOPE (inch per foot)	DISTANCE FROM TRAP (feet)
1 ¼	¼	5
1 ½	¼	6
2	¼	8
3	1/8	12
4	1/8	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 inch per foot = 83.3 mm/m

IPC 1003.3.1 Automatic Grease Extraction

1003.4 Oil Separators Required

- The IPC modifies the requirement for all repair garages and car washes to have oil separators.
- Deletes the exception for repair garages and car washes without engine or under carriage cleaning capabilities.
- Adds hydraulic elevator pits with an exception if the pit has an approved alarm system.

Oil-Minder Control and Accessories

2006 CODE UPDATE TRAINING

INTERNATIONAL RESIDENTIAL CODE 2006 EDITION

MECHANICAL SECTION

IRC N1103.2.1
DUCT INSULATION

- Added new code section to read as follows: Supply and return ducts shall be insulated to a minimum R-8.
- Exception: Ducts or portions thereof located completely inside the building thermal envelope.

IRC M1308.3
FOUNDATIONS AND SUPPORTS

- Foundations and supports for outdoor mechanical systems shall be raised at least 3 inches above finished grade and shall also conform to the manufacturer's instructions.

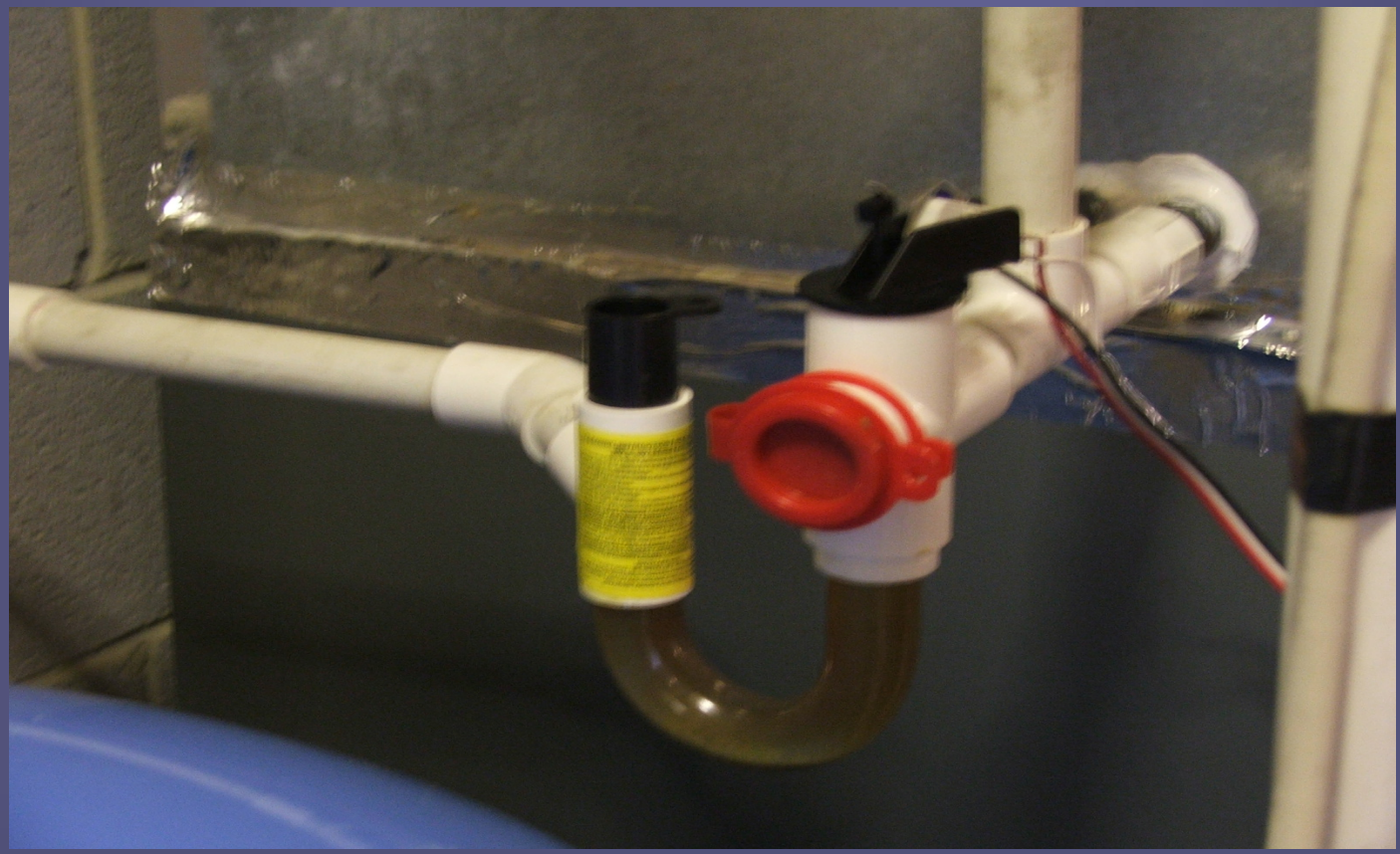
IMC 307.2.3 & IRC M1411.3.1

Auxiliary and Secondary Drain Systems

- Added new code sub-section: #4. A water level detection device conforming to UL 508 shall be provided that will shut off the equipment served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, the overflow drain line or the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

IMC 307.2.3 & IRC M1411.3.1

Auxiliary and Secondary Drain Systems



IMC 307.2.3.1 & IRC M1411.3.1.1

WATER LEVEL MONITORING DEVICES

- Added new code section to read as follows: On down flow units and all other coils that have no secondary drain and no means to install an auxiliary drain pan, a water level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Externally installed devices installed in the drain shall not be permitted.

IRC M1411.4

AUXILIARY DRAIN PAN

- Added new code section to read as follows: Category IV condensing appliances shall be provided with an auxiliary drain pan where damage to any building component will occur as a result of stoppage in the condensate drain piping system. These pans shall be installed in accordance with the applicable provisions of Sections M1411.3.

  Exception: Fuel-fired appliances that automatically shut down operation in the event of stoppage in the condensate drain system.

IRC M1501.1 & M1506.2

OUTDOOR DISCHARGE

- Added new section to read as follows: The air removed by every mechanical exhaust system shall be discharged to the outdoors. Air shall not be exhausted into an attic, soffit, ridge vent or crawl space.

  Exception: Whole-house ventilation-type fans that discharge into the attics of dwelling units having private attics shall be permitted.

IRC M1502

CLOTHES DRYER DUCT

- Dryer exhaust systems moved from M1501 to M1502.
- **M1502.2 Duct Termination.** Exhaust ducts shall terminate on the outside of the building. Exhaust terminations shall be in accordance with the dryer manufacturer's installation instructions. Exhaust ducts shall terminate not less than 3 feet in any direction from openings into buildings. Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination.

IMC 504.6.1 & IRC M1502.6

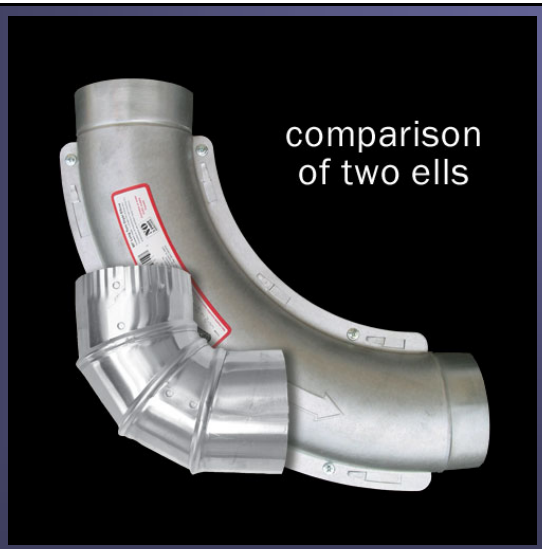
DUCT LENGTH

- The USBC changes the maximum length of a dryer exhaust from 25 ft. to **35 ft**.
- Removed provisions for booster fans.
- Renumbered exception #2 as exception #1

IRC M1502.6

CLOTHES DRYER DUCT LENGTH

- Added new exception: #2. Where large radius 45-degree and 90-degree bends are installed, determination of the equivalent length of clothes dryer for each bend by engineering calculation in accordance with ASHRAE Fundamentals Handbook shall be permitted.



IRC M1601.3.1

JOINTS AND SEAMS

- Added language inside body of text to read as follows: Mechanical fasteners for use with flexible nonmetallic air ducts shall comply with UL181B and shall be marked 181B-C.

IRC M2103.1

PIPING MATERIALS

- Added cross-linked polyethylene (PEX) tubing, or polypropylene (PP) to the body of the text.

IRC M2103.2

PIPING JOINTS

- Added sub-section 5 to read as follows: Polypropylene pipe and tubing joints shall be installed with socket-type heat-fusion polypropylene fittings.
- Added sub-section 6 to read as follows: Cross-linked polyethylene (PEX) tubing shall be joined using cold expansion, insert, or compression fittings.

IRC M2104.2

PIPING JOINTS

- Added sub-section 3 to read as follows: Polypropylene (PP) tubing shall be installed in accordance with the manufacturer's instructions.

IRC M1411.3.1

AUXILIARY AND SECONDARY DRAIN SYSTEMS

- This is not a code change.
- The secondary or pan drain must terminate in a conspicuous location.
- A conspicuous location can be, but is not limited to:

    1) Above a window or door.

    2) In the attached garage.

    3) Over a deck or porch.

2006 CODE UPDATE TRAINING

2006 INTERNATIONAL MECHANICAL CODE

IMC 304.10 Guards

- Adds new provision when roof hatch openings are less than 10 feet from roof edge or open side of a walking surface they shall be protected.

IMC 403

VENTILATION

- Section 403 has been revised through the USBC. Ventilation tables, formulas, etc. have been changed/added.

IMC 506.3.3 GREASE DUCT TEST

- New code provisions added that all grease duct systems shall be tested prior to concealment, to determine that all welded and brazed joints are liquid tight. A 100 watt light test or an approved method shall be done on all of the ductwork.

IMC 507.2.1.1 OPERATION

- Added language to code to read as follows: Type 1 hood systems shall be designed and installed to automatically activate the exhaust fan whenever cooking operations occur. **The exhaust fan shall be interlocked with the cooking appliances by means of heat sensors or other approved methods.**

IMC 513.8 EXHAUST METHOD

- New language added to existing text : Smoke control systems using the exhaust method shall be designed in accordance with **NFPA 92 B**
- 513.8.1 Exhaust Rate: Existing text has been shortened and the accumulating smoke layer shall be maintained at least **6 feet** above any walking surface which forms a portion of a egress system within the smoke zone. The old height was **10 feet.**

IMC CHAPTER 7 COMBUSTION AIR

- 701.1 Scope: Solid –fuel burning appliances shall be provided with combustion air in accordance with the manufacturers installation instructions. Oil fired appliances shall be provided with combustion air in accordance with **NFPA 31.** The methods of providing combustion air in this chapter do not apply to fireplaces, fireplace stoves and direct vent appliances.

IMC 1002.2.2 BOILERS, WATER HEATERS, PRESSURE VESSELS

- Temperature limitations: **(Scald Protection) a temperature actuated mixing valve that conforms to ASSE 1017 shall be provided to temper the water supplied to the potable hot water system.**

- **NOTE: This is required where a combination of potable water heating and space heating systems are installed and the space heating requires water temperatures greater than 140 deg. F.**

2006 CODE UPDATE TRAINING

INTERNATIONAL RESIDENTIAL CODE 2006 EDITION

FUEL GAS SECTION

IRC G2403

GENERAL DEFINITIONS

- **POINT OF DELIVERY:** This change clarifies the definition of point of delivery for undiluted LP gas systems to be at the point the regulator drops the delivery pressure to 2 PSIG.

IFGC 307.5 & IRC G2404.10

AUXILIARY PAN DRAIN

🛠 Added section to read as follows: Category IV condensing appliances shall be provided with an auxiliary drain pan where damage to any building component will occur as a result of stoppage in the condensate drainage system. Such pan shall be installed in accordance with the applicable provisions of Chapter 14.

🛠 **Exception:** An auxiliary drain pan shall not be required for appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.

IFGC 310.1 & IRC G2411.1

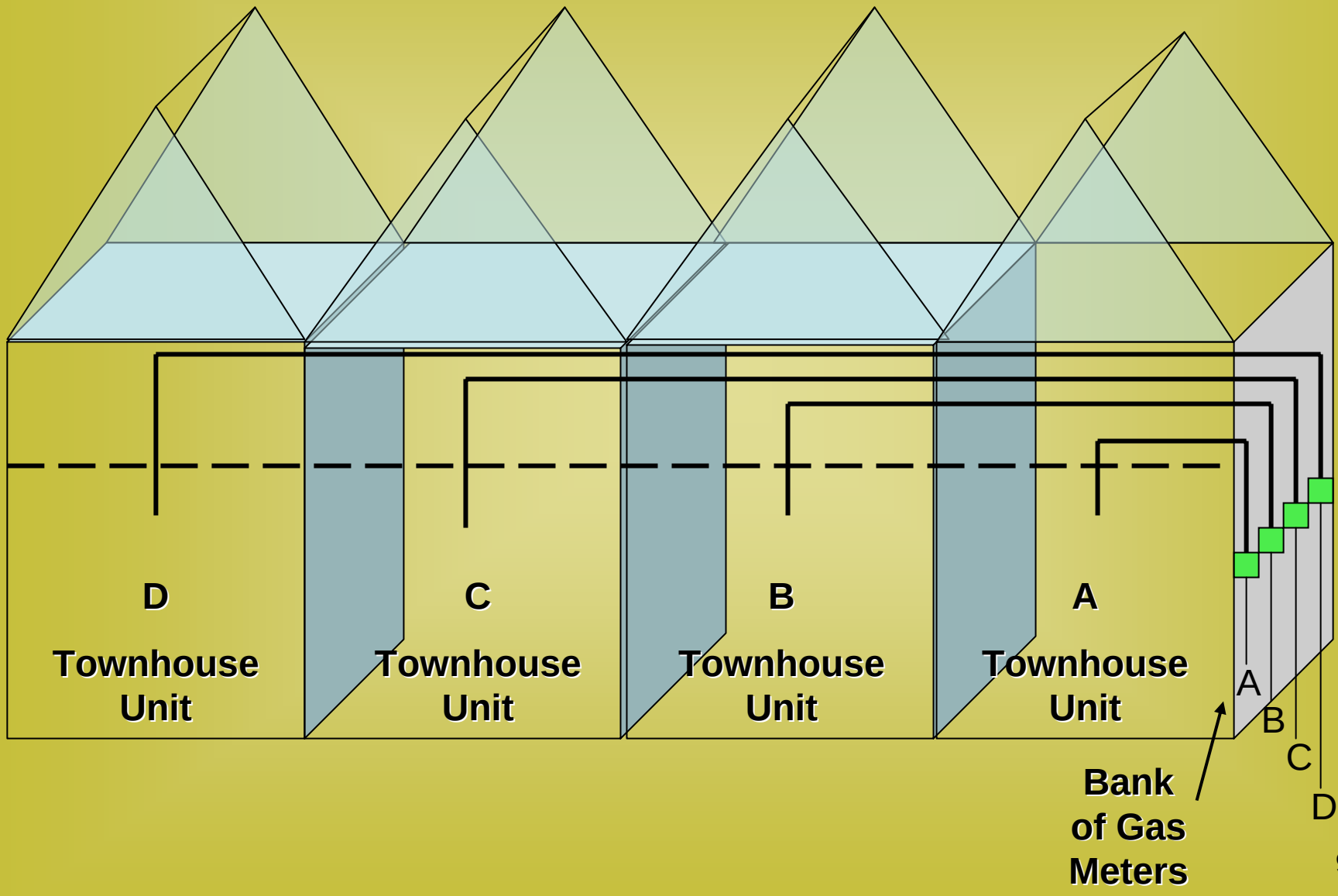
GAS PIPE BONDING

- The USBC amends this section to require **ALL CSST** piping to be bonded to the electrical service grounding electrode system where the gas service enters the building.
- Stipulates that the bonding conductor size **shall not** be less than 6 AWG copper wire or equivalent.

IFGC 404.1 & IRC G2415.1 PROHIBITED LOCATIONS

- Additional criteria have been added to the prohibited locations section to read as follows: Piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping.

This Practice No Longer Allowed



IFGC 404.5, 704.1.2.3.5 & IRC G2415.5

PROTECTION AGAINST PHYSICAL DAMAGE

- Modifies this section to increase the provision for the protection of gas piping, other than black iron or galvanized, from driven nails from 1 inch to 1.5 inches.
- **This does not include CSST.**

IFGC 404.6 & IRC G2415.6

PIPING IN SOLID FLOORS

- Added sentence for clarification to read as follows: The conduit shall be vented above grade to the outdoors and shall be installed so as to prevent the entry of water and insects.

IFGC 410.3 & IRC G2421.3

VENTING OF REGULATORS

- Reworded section to say that pressure regulators that require a vent shall be vented directly to the outdoors.
- Also added language to prevent the entry of insects, water and foreign objects.
- Vent limiters can be used per manufactures installation instructions.

IFGC 410.3.1 & IRC G2421.3.1

VENT PIPING

- New section added to read as follows: Vent piping shall be not smaller than the vent connection on the pressure regulating device. Vent piping serving relief vents and combination relief and ***breather vents*** shall be run independently to the outdoors and shall serve only a single device vent. Vent piping serving only breather vents is permitted to be connected to a manifold arrangement where sized in accordance with an approved design that minimizes back pressure in the event of diaphragm rupture.

IFGC 502.7 & IRC G2426.7

PROTECTION AGAINST PHYSICAL DAMAGE TO APPLIANCE VENTS

- Added section to read as follows: In concealed locations, where a vent is installed through holes in studs, joists, rafters, or similar members less than 1.5 inches from the nearest edge of the member, the vent shall be protected by shield plates. Shield plates shall be a minimum of 1/16-inch-thick steel, shall cover the area of the vent where the member is notched or bored, and shall extend a minimum of 4 inches above sole plates, below top plates and to each side of a stud, joist or rafter.

2006 CODE UPDATE TRAINING

INTERNATIONAL FUEL GAS CODE 2006 EDITION

IFGC 301.7

APPLIANCE FUEL TYPES & CONVERSION

- Conversion of an appliance for connection to a different fuel type now requires that complete instructions for conversion must be provided by the serving gas supplier or the appliance manufacturer and must be included in the installation instructions.
- References to the altitude of the installation have been deleted.

IFGC 411

APPLIANCE FUEL GAS CONNECTIONS

- Section 411 has been entirely reorganized to clarify the requirements for fuel gas connectors. Methods for the connection of manufactured homes and outdoor appliances to the gas piping system are now recognized and specified. CSST is now specifically recognized and approved for connecting the appliance to the gas system. Commercial cooking appliances subject to moving are limited to connection with a listed and labeled connector in accordance with **ANSI Z21.69**.

IFGC 416

OVERPRESSURE PROTECTION DEVICES

- New requirements have been added for overpressure protection devices for high pressure gas systems, which would apply mainly to large commercial and industrial installations.
- The code is now consistent with requirements of ANSI Z223.1.

IFGC 505.1.

COMMERCIAL COOKING APPLIANCES VENTED BY EXHAUST HOODS

- Added language to prohibit gas piping from by-passing a solenoid valve installed as part of the required interlock system of kitchen exhaust hoods serving as appliance vents.
- An exception to the appliance and exhaust interlock requirement has been added to allow an automatically activated exhaust system.

IFGC 406.4 & IRC G2417.4
Test Pressure Measurement

- Test gauge limited to maximum 30 psig.
- Test pressure to be in mid-range of gauge.